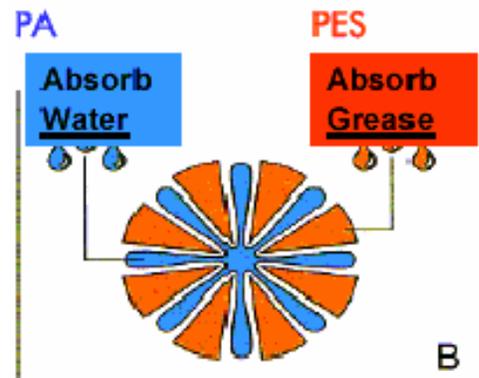


## Microfiber

- I. What is Microfiber?
- A. Microfiber consists of very fine threads of polyester and polyamide (nylon) that is woven together to form a single thread
1. one microfiber is 100 times thinner than a single strand of human hair and twice as fine as silk.
  2. when woven together, the microfibers create a surface area 40 times greater than that of a regular fiber
  3. the increased surface area is what gives microfiber the enhanced absorption
- B. Microfiber is traditionally defined as a fiber with a denier less than one.
1. denier (D) is a measure of the thinness of a fiber and is the weight in grams of a continuous fiber that is 9,000 meters long
  2.  $1 D = 1 \text{ gram}/9,000 \text{ meters}$
  3. some microfiber is so fine that a single strand stretching 25,000 miles around the earth would only weigh a few pounds
- II. How does microfiber work?
- A. Unlike the rounded threads found in ordinary cloth, microfiber has numerous wedges that draw dirt, oil, liquid etc., into the core of the fiber. (see illustration)

### **Microfiber in the cross cut**

- ☒ Polyester (PES) absorbs grease and dirt from the surface
- ☒ Polyamide (PA) absorbs water from the surface.



- C. Studies have shown that microfiber can even capture up to 99% of microscopic particles such as bacteria on many surfaces instead of just pushing it around
- D. Microfiber has microscopic barbs that have the ability to scrape and hold the soil from the surface and store it in the towel until it is washed
- E. Microfiber consists of 2 polymers
1. polyester
    - a. lyophilic
    - b. has an affinity to oil
  2. polyamide
    - a. hydrophilic
    - b. has an affinity to water
    - c. Microfiber can absorb up to 7 times its weight in fluids

- F. Microfibers have a positive charge that attracts dust, which has a negative charge. Therefore dust and soil particles are not only attracted to the Microfiber, but are held tightly and therefore not easily re-distributed during cleaning

### III. Why Use Microfiber?

#### A. More sanitary.

- 1. Research conducted by a hospital in Sweden ("Cleaning Methods with low Chemical Use" by the University Hospital in Lund Sweden, October 1998) found that dry cleaning with a microfiber cloth reduced surface contamination 85% better than traditional wet/chemical cleaning
- 2. they reduced their consumption of chemicals by over 75%

#### B. More economical

- 1. You do not need to replace them as often
  - a. Microfiber cloths resist tearing and shredding and as a result do not need to be replaced as often
  - b. can be laundered 500-1,000 times and still maintain their effectiveness
- 2. Significantly reduces the need for chemical cleaners thereby reducing costs
- 3. Dry in 1/3 the time in the dryer thereby reducing energy costs

#### C. Better for the environment

- 1. reduced need for chemicals that would otherwise go into the environment
- 2. because they are reusable, it reduces the need for disposable products such as paper towels

#### D. Saves time

- 1. surfaces dry more quickly because more moisture is absorbed
- 2. one step cleaning—cleaning and polishing are accomplished in one swipe
- 3. dry in 1/3 the time in the dryer thereby reducing energy costs

### IV. Use and Care of Microfiber

#### A. Uses

- 1. eye/sunglasses
- 2. furniture
- 3. fine collectibles
- 4. lamps and shades
- 5. TV, computer, iPod, Palm Pilot screens
- 6. CD's
- 7. auto interiors and exteriors
- 8. jewelry
- 9. floors
- 10. windows and mirrors

#### B. Can be machine washed and dried

- 1. do not use bleach—breaks down fibers over time

2. do not use fabric softener, dryer sheets or detergents with fabric softener in them
  - a. this coats the fibers and makes them less absorbent
  - b. eliminates the static charge that makes the fabric so proficient at trapping dust and liquid
3. use a low heat or fluff setting on the dryer. Excessive heat is the #1 thing that will damage microfiber over time.
4. wash and dry with other low lint producing fabrics

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